

Accuracy Characteristics for ZFW Risk Reduction Nominal Scenario, Hours 1625-2133

1 Introduction

This document contains scenario characteristics for hours 1625 to 2133 (actual recorded data 16:25:54 to 21:33:04) GMT recorded on December 4, 2002 at Fort Worth ARTCC (ZFW). Characteristics provided are general statistics determined from the scenario on general air traffic activity and aircraft and air carrier characteristics. Definitions for these scenario characteristics are provided in Reference[1].

2 Air Traffic Distributions

This section provides metrics that characterize the air traffic. The metrics are flight density partitioned by standard flight levels, flight type and sector penetration, statistics on the number of active flights, ground speed statistics, counts of interim altitude and amendment messages, and air traffic maneuvers by altitude and phase of flight. This section corresponds to Section 3.3 of Reference[1].

2.1 Active Flights

This section corresponds to section 3.3.2 of Reference[1].

Table 1: Statistics on Active Flights per Minute Increment

Count Average	Standard Deviation	Maximum Count	Minimum Count
197.1009	62.18462	269	0

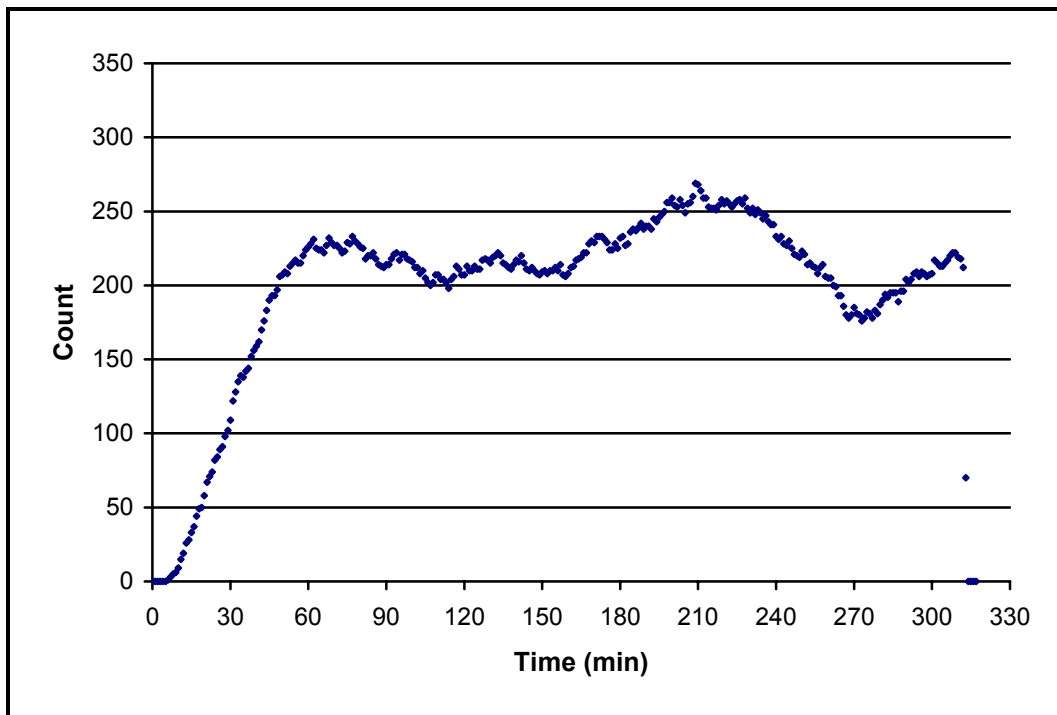


Figure 1: Count of Active Flights per Minute Increment

2.2 Flight Type and Sector Penetration

This section corresponds to Section 3.3.3 of Reference[1].

Table 2: Statistics on Sector Time, Center Time and Sector Penetration by Flight Type

Metric	Arrivals	Departures	Internals	Overflights	All Flights
Average Number of Sectors Penetrated	2.244	2.258	2.143	2.490	2.314
Average Time in Center (sec)	1496.474	1264.661	1225.102	1494.771	1403.181
Average Time in Sector (sec)	659.924	553.640	562.222	592.284	599.030
Percentage by Flight Type	28.46715	28.710	8.942	33.151	100.000

2.3 Interim Altitude Messages

This section corresponds to Section 3.3.6 of Reference[1].

Table 3: Statistics on Interim Altitude Messages ¹

Flight Count	Average	Standard Deviation	Maximum Count	Minimum Count
1219	2.669401	0.942418	7	1

2.4 Amendment Messages

This section corresponds to Section 3.3.7 of Reference[1]

Table 4: Statistics on Amendment Messages per Flight²

Flight Count	Average	Standard Deviation	Maximum Count	Minimum Count
907	2.179713	1.364039	9	1

¹ Statistics on flights with interim altitude messages only

² Statistics on flights with flight plan amendments only

2.5 Air Traffic Maneuvers

This section corresponds to Section 3.3.8 of Reference[1]. Detailed statistics on air traffic maneuvers are provided in Appendix C.

Table 5: Total Track Report Maneuver Count by Vertical and Horizontal Phase of Flight

Vertical Phase	Horizontal Phase of Flight		Total
	STR	TURN	
ASC	11474	2077	13551
DES	15892	2678	18570
LEV	3875	2167	6042
Total	31241	6922	38163

Table 6: Percent breakdown of Flight Tracks by Vertical and Horizontal Phase

Vertical Phase	Horizontal Phase of Flight		Margin (%)
	STR (%)	TURN (%)	
ASC	30.066	5.442	35.508
DES	41.642	7.017	48.660
LEV	10.154	5.678	15.832
Margin (%)	81.862	18.138	100.000

3 Aircraft Distributions

This sections provides the metrics used to characterize the aircraft provided in the scenario. The selected metrics are aircraft type, model, navigational equipment, and the air carriers operating in the airspace. The section corresponds to Section 3.4 of Reference[1].

3.1 Aircraft Type

This section corresponds to Section 3.4.1 of Reference[1].

Table 7: Count by Aircraft Type

Aircraft Type	Count	Percentage of Total
J	1333	80.156
T	60	3.608
P	195	11.726
Unknown	75	4.510
Total	1663	100.000

3.2 Aircraft Models

This section corresponds to Section 3.4.2 of Reference[1].

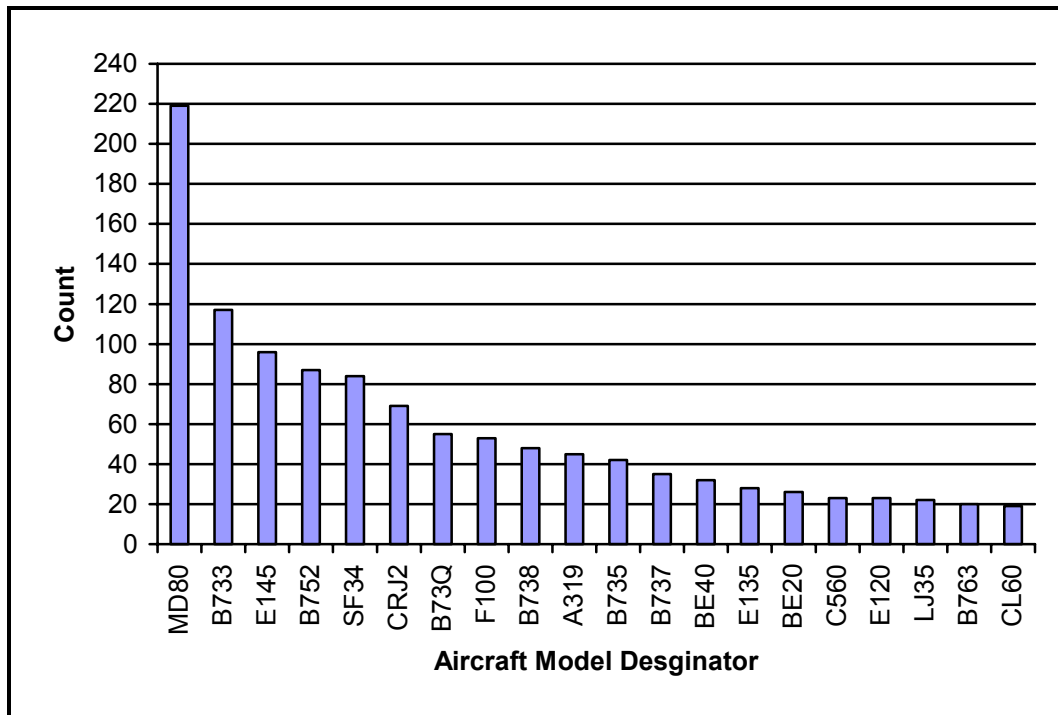


Figure 2: Count of Top Twenty Aircraft Models

3.3 Navigational Equipage

This section corresponds to Section 3.4.3 of Reference[1].

Table 8: Count by Aircraft Navigational Equipage Type

Nav. Equip. Designator	Count	Percentage of total
G	436	26.218
E	311	18.701
F	255	15.334
A	249	14.973
I	226	13.590
R	122	7.336
Q	22	1.323
W	22	1.323
Unknown	14	0.842
P	4	0.241
B	2	0.120
Total	1663	100.000

3.4 Carrier Distribution

This section corresponds to Section 3.4.4 of Reference[1].

Table 9: Count by Carrier Type

Category	Count	Percentage of Total
Commercial	1257	75.586
General Aviation	311	18.701
Other ³	95	5.713
Total	1663	100.000

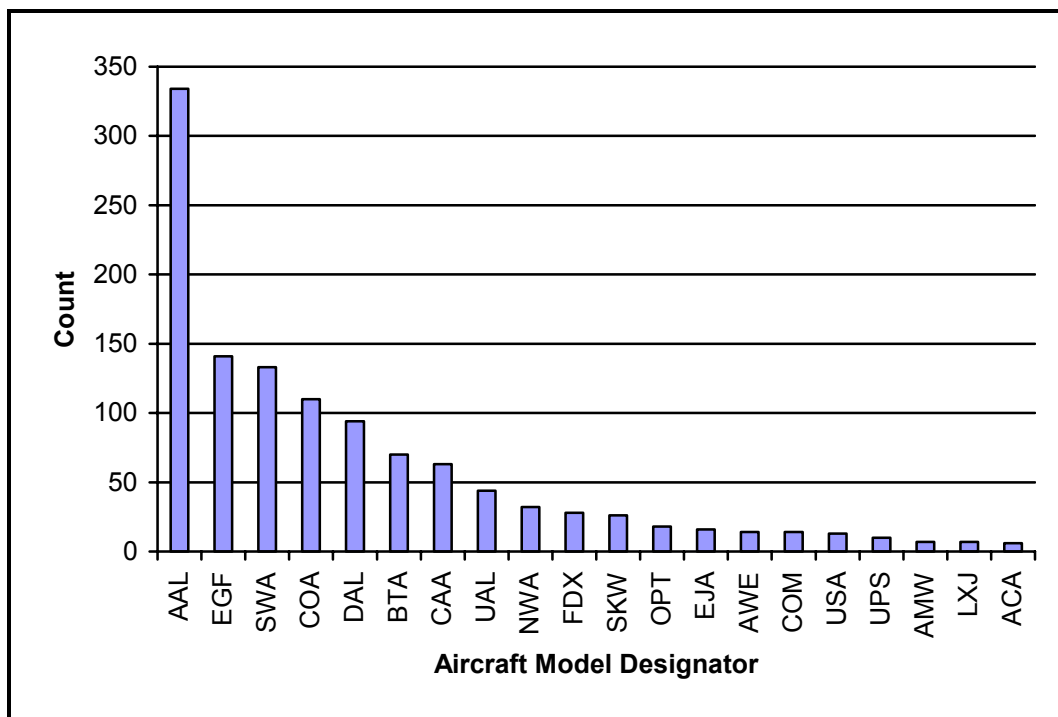


Figure 3: Count by Top Twenty Air Carriers

4 Reference

[1] Paglione, M., Oaks, R., Ryan, Dr. H., Summerill, J.S., (Final, January 2000), "Description of Accuracy Scenarios for the Acceptance Testing of the User Request Evaluation Tool (URET) / Core Capability Limited Deployment (CCLD)," FAA William J. Hughes Technical Center / ACT-250, Atlantic City, New Jersey.

³ Includes military and aircraft with unrecognized designators.